



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,068	08/28/2001	Qiyong Bian	303.741US1	5646
21186	7590	01/26/2005	EXAMINER PHAN, THAI Q	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			ART UNIT 2128	PAPER NUMBER

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N . 09/941,068	Applicant(s) BIAN, QIYONG	
	Examiner Thai Q. Phan	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-30 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 28 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to patent application S/N: 09/941,068, filed on 08/28/2001. Claims 1-30 are pending in this Action.

Drawings

The drawings filed on 08/28/2001 are acceptable for examination.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-30 are rejected under 35 U.S.C. 102(a) as being anticipated by Donald Gay, US patent no. 6,188,975 B1.

As per claim 1, Gay anticipates a method and system for interface of hardware and software for co-simulation with feature limitations similarly related to the claimed invention. According to Gay, the computer implemented method includes steps

Executing a client module configured to simulate behavior of an electronic system (Figs. 4 and 5, col. 8, lines 9-43, for example),

Using a remote procedure call (RPC) to transfer process control (col. 8, lines 9-43) to a server module that models behavior of a component of the electronic system (col. 7, line 15 to col. 8, line 33), and

returning process control to the client module after execution of the server module (cols. 6-9) for the simulation.

Art Unit: 2128

As per claim 2, Gay anticipates Verilog/PLI module as claimed (col. 7, lines 54-63).

As per claim 3, Gay anticipated system C module (col. 5, line 65 to col. 6, line 27, col. 7, lines 54-65).

As per claims 3-10, Gay anticipates the claimed limitations such as network protocol, sever, client, data transport layer, etc. for data communications and interfacing (cols. 6-9).

As per claim 11, Gay anticipates a computer program product or readable medium, and system for interface of hardware and software for co-simulation with feature limitations similarly related to the claimed invention. According to Gay, the computer implemented computer program readable med includes means for:

Executing a client module configured to simulate behavior of an electronic system (Figs. 4 and 5, col. 8, lines 9-43, for example),

Using a remote procedure call (RPC) to transfer process control (col. 8, lines 9-43) to a server module that models behavior of a component of the electronic system (col. 7, line 15 to col. 8, line 33), and
returning process control to the client module after execution of the server module (cols. 6-9) for the simulation.

As per claim 12, Gay anticipates the client module is a Verilog/PLI module (col. 7, lines 54-63).

As per claim 13, Gay anticipates systemC module as claimed (cols. 5-7).

Art Unit: 2128

As per claims 14-20, Gay anticipates transport protocol for RPC, network data communication, component simulation, and interface for hardware/software co-simulation as claimed.

As per claims 21-23 and 27, Gay anticipates computer readable medium with instruction codes for

Executing a client module configured to simulate behavior of an electronic system (Figs. 4 and 5, col. 8, lines 9-43, for example),

Using a remote procedure call (RPC) to transfer process control (col. 8, lines 9-43) to a server module or a systemC module (col. 7, lines 54-64) that models behavior of a component of the electronic system (col. 7, line 15 to col. 8, line 33),

Suspending operation of the systemC interface,

Advancing simulation time by clock cycle to meet timing, and

Returning process control to the client module after execution of the server module (cols. 6-9) for the simulation.

As per claims 24, 25, 26 and 28-30, Gay anticipates systemC module implemented for RPC, Verilog/PLI module for RPC interface, programming language such as C being used for language interface, etc as claimed (cols. 6-9).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
1. US patent no. 6,490,545 B1, issued to Jason Peng, on Dec. 2002
2. US patent no. 6,539,473 B1, issued to Hubacher et al, on Mar. 2003

Art Unit: 2128

3. US Patent Application Publication no. US 2002/0101824 A1
4. US Patent Application Publication no. US 2004/0088150 A1
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Q. Phan whose telephone number is 571-272-3783.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached on 571-272-3780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jan. 21, 2005



Thai Phan
Patent Examiner
Art Unit: 2128